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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/485,940	02/18/2000	JOHN BARRETT GEORGE	RCA88741	1944

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EXAMINER

TRAN, TRANG U

ART UNIT	PAPER NUMBER
2614	4

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Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	09/485,940	GEORGE ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	Trang U. Tran	2614	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1) Responsive to communication(s) filed on 18 February 2000.

2a) This action is **FINAL**.                    2b) This action is non-final.

3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4) Claim(s) 1-7 is/are pending in the application.

4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.

5) Claim(s) \_\_\_\_\_ is/are allowed.

6) Claim(s) 1-7 is/are rejected.

7) Claim(s) \_\_\_\_\_ is/are objected to.

8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

9) The specification is objected to by the Examiner.

10) The drawing(s) filed on \_\_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11) The proposed drawing correction filed on \_\_\_\_\_ is: a) approved b) disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12) The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

13) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a) All b) Some \* c) None of:

1. Certified copies of the priority documents have been received.

2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.

3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

14) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) The translation of the foreign language provisional application has been received.

15) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

1) Notice of References Cited (PTO-892)

2) Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) Information Disclosure Statement(s) (PTO-1449) Paper No(s) 3.

4) Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_.

5) Notice of Informal Patent Application (PTO-152)

6) Other: \_\_\_\_\_.

## **DETAILED ACTION**

### ***Claim Objections***

1. The numbering of claims is not in accordance with 37 CFR 1.126 which requires the original numbering of the claims to be preserved throughout the prosecution. When claims are canceled, the remaining claims must not be renumbered. When new claims are presented, they must be numbered consecutively beginning with the number next following the highest numbered claims previously presented (whether entered or not).

Misnumbered claims 5-9, 10 and 12-13 have been renumbered 1-7, respectively.

### ***Claim Rejections - 35 USC § 112***

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 3-4 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 3-4 recites the limitation "said digital words" in line 1. There is insufficient antecedent basis for this limitation in the claim.

### ***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1-2 and 5-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Heizmann et al (US Patent No. 6,108,054) in view of Nobuo Yamazaki et al.

("DIGITAL GEOMETRY CORRECTION AND DEFLECTION CONTROL SYSTEM FOR MULTI-SCAN MONITORS", IEEE, 1995, pages 540-549).

In considering claim 1, Heizmann et al discloses all the claimed subject matter, note 1) the claimed a cathode ray tube for displaying an image, having a deflection correction coil mounted thereon and coupled to drive amplifier is met by the cathode ray tubes 260, 265 and 270 (Fig. 2, col. 3, lines 15-24), 2) the claimed a digital to analog converter with an output coupled to said drive amplifier is met by the DAC array 250 (Fig. 2, col. 3, lines 30-40), 3) the claimed a memory containing displacement values applicable to spaced points in a grid of rows and columns is met by the non-volatile memory 240 and the volatile memory 245 (Figs. 1 and 2, col. 2, line 54 to col. 3, line 53), and 4) the claimed interpolating means for interpolating intervening values adjacent ones of said displacement values and having an output coupled to said digital to analog converter for generating a corrective signal to drive said deflection correction coil for locally adjusting a position of said image such that banding and pincushion distortion are controlled is met by the vertical interpolation (Fig. 3, col. 4, line 2 to col. 6, line 65).

However, Heizmann et al explicitly does not disclose the claimed said displacement values for said columns generally defining S-shaped correction curves having a maximum value at two areas of a display screen located substantially between a center axis and ones of top and bottom edges of the display, said S-shaped correction

curves having substantially zero value at areas adjacent to said center axis and said edges.

Nobuo Yamazaki et al teach that as well as the vertical position, when the vertical size is varied, one can see linearity distortion in the picture again and one needs to vary the S correction parameter in connection with the vertical size parameter and Fig. 3 is an example when the vertical size is affected by the S correction parameter (pages 540-549).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to incorporate the S correction as taught by Nobuo Yamazaki et al into Heizmann et al's system in order to correct the geometric distortion of the multi-scan monitor.

In considering claim 2, the claimed wherein S-shaped correction is added in successive steps proceeding from said areas located substantially between said center axis and said ones of top and bottom edges, toward said center axis and toward said edges, respectively is met by the S correction parameter (Fig. 3, pages 540-549) of Nobuo Yamazaki et al.

In considering claim 5, the claimed wherein said linear interpolating means generates said intervening values adjacent ones of said displacement values during a display period is met by the vertical interpolation (Fig. 3, col. 4, line 2 to col. 6, line 65) of Heizmann et al.

Claim 6 is rejected for the same reason as discussed in claim 1.

Claim 7 is rejected for the same reason as discussed in claim 5.

6. Claims 3-4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Heizmann et al (US Patent No. 6,108,054) in view of Nobuo Yamazaki et al. ("DIGITAL GEOMETRY CORRECTION AND DEFLECTION CONTROL SYSTEM FOR MULTI-SCAN MONITORS", IEEE, 1995, pages 540-549) and further in view of Masanori Fujiwara et al (EP 0 689 363 A2).

In considering claim 3, the combination of Heizmann et al and Nobuo Yamazaki et al disclose all the limitations of the instant invention as discussed in claim 1, except for providing the claimed wherein said digital words stored in said memory represent values derived during alignment of said video display. Masanori Fujiwara et al teach that the static convergence correction data is a data showing the amount of movement in the horizontal and vertical directions and is set for each of R, G and B colors, that is, the static convergence correction data is comprised of one 6 kinds of data, each of which is comprised of one word, therefore, the static convergence correction data output unit 48 is provided with a memory having the capacity to store 6 words for the adjust colors R, G and B in the horizontal and vertical directions (col. 5, lines 24-47). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to incorporate the digital word as taught by Masanori Fujiwara et al into the combination of Heizmann et al and Nobuo Yamazaki et al's system in order to provide a digital convergence apparatus which is capable of preventing the density of scanning lines from lacking uniformly, thus promoting the quality of picture.

In considering claim 4, the combination of Heizmann et al and Nobuo Yamazaki et al disclose all the limitations of the instant invention as discussed in claim 1, except

for providing the claimed wherein said digital words defining displacement values stored in said memory represent values formed by interpolation of displacement values applicable to said grid. Masanori Fujiwara et al teach that the static convergence correction data is a data showing the amount of movement in the horizontal and vertical directions and is set for each of R, G and B colors, that is, the static convergence correction data is comprised of one 6 kinds of data, each of which is comprised of one word, therefore, the static convergence correction data output unit 48 is provided with a memory having the capacity to store 6 words for the adjust colors R, G and B in the horizontal and vertical directions (col. 5, lines 24-47). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to incorporate the digital word as taught by Masanori Fujiwara et al into the combination of Heizmann et al and Nobuo Yamazaki et al's system in order to provide a digital convergence apparatus which is capable of preventing the density of scanning lines from lacking uniformly, thus promoting the quality of picture.

### ***Conclusion***

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Giard (US Patent No. 6,329,768 B1) discloses process for correcting picture deformation and device implementing this process.

Shirahama et al (US Patent No. 5,909,258) disclose cathode ray tube display and television set having the same.

Kato (US Patent No. 6,088,015) discloses waveform generator.

Murakami (US Patent No. 5,473,223) discloses vertical deflection waveform generating apparatus.

Hojabri (US Patent No. 5,877,599) discloses vertical and horizontal scanning correction system for video display.

Watanabe (US Patent No. 4,810,939) discloses top and bottom pincushion distortions correcting circuits to be used for picture tube having aspherical face plate.

Dietz (US Patent No. 4,645,985) discloses s-correction circuit for a video display.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Trang U. Tran** whose telephone number is **(703) 305-0090**.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, **John W. Miller**, can be reached at **(703) 305-4795**.

**Any response to this action should be mailed to:**

Commissioner of Patents and Trademarks

Washington, D.C. 20231

**or faxed to:**

**(703) 872-9314 (for Technology Center 2600 only)**

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA, Sixth Floor (Receptionist).

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology Center 2600 Customer Service Office whose telephone number is (703) 306-0377.

TT TT  
June 13, 2003



JOHN MILLER  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2600